O1. Small is Big and Beautiful: Managing the Uncertainty

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Abstract

Nanotechnology - the ability to work at the atomic and molecular level to improve on the existing products and services and creating the new ones with fundamentally new properties and functions-is regarded as "the next big thing" and a new engine for world economic growth. The technology revolution has started. Looming just ahead is what may well be its most exciting phase - nanotechnology. This will be bigger than the Internet and more far-reaching. It will create vast new wealth. It will destroy a lot of old wealth. And it will shake up just about every business on planet. According to a UNESCO-sponsored study in 1996, nanotechnology will provide the foundation of all technologies in the new century. It is predicted that nano-related goods and services could be a $1 trillion market by 2015 which will employ about 2 million workers. Thus, the potential is great and vast. However, the uncertainty on the adverse effects, perceived or real, so far, is certain. The concerns on the risks of nanotechnology, in a number of cases, have led to backlashes.

The aim of this paper is to establish an analytical framework for the debate on whether or not nanotechnology is to be regulated, and how to go about it. The paper provides an overview of the nature of nanotechnology and the benefits as well as its potential risks to the well being of human and the environment. The paper then formulates a number of debating points on "yes" or "no" to nano. The adequacy of the existing rules and regulation to mitigate the risks of the technology is also assessed. In conclusion, the paper outlines some proposals on the way forward for nanotechnology in dealing with the uncertainty.

Keywords: Nanotechnology, nanomaterial, uncertainty, adverse effects, rules and regulation